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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DANIEL JR, WILLIE J

ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,561

Applicant(s)

PARK ET AL.

Examiner

Willie J. Daniel, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. This action is in response to application filed on 09 February 2004. **Claims 1-34** are now pending in the present application.

Specification

2. The disclosure is objected to because of the following informalities:
 - a. Applicant uses "doted" on pg. 6, 3rd paragraph; pg. 7, 2nd paragraph. Examiner suggests using "dotted".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanmugam (US 5,533,094).

Regarding **Claim 1**, Sanmugam discloses a method of processing paging information in a cellular radio communication system (Fig. 1) which reads on the claimed "communications system" (see col. 4, lines 56-64; Figs. 1, 9), the method comprising:
operating a first node (e.g. MSC 254) to receive said paging information, said paging information including at least one of a paging parameters which reads on the claimed

“quality of service indicator”, a type indicator, a source indicator, and a destination indicator (see col. 13, lines 1-32; col. 7, lines 8-15; col. 8, line 1-9; col. 9, line 2; Figs. 9, 8A-B), where page requests are based on paging information such as class of service, paging parameters, paging field, paging characteristics, and paging extent; and

operating the first node (e.g. MSC 254) to determine from said received paging information a paging requirement, said paging requirement being determined as a function of said at least one of a quality of service indicator, a type indicator, a source indicator, and a destination indicator (see col. 13, lines 1-32; col. 7, lines 8-15; col. 8, line 1-9; col. 9, line 2; Figs. 9, 8A-B), where page requests are based on paging information such as class of service, paging parameters, paging field, paging characteristics, and paging extent.

Regarding **Claim 2**, Sanmugam discloses the method of claim 1, further comprising: operating said first node (e.g., MSC 254) to allocate a paging transmission resource for transmitting a page as a function of the determined paging requirement (see col. 13, lines 1-32; col. 7, lines 8-15; col. 8, line 1-9; col. 10, lines 53-56; Figs. 9, 8A-B).

Regarding **Claim 3**, Sanmugam discloses the method of claim 2, further comprising: operating said first node (e.g., MSC 254) to transmit a page using the allocated paging transmission resource (see col. 13, lines 1-32; col. 7, lines 8-15; col. 8, line 1-9; col. 10, lines 53-56; Figs. 9, 8A-B).

Regarding **Claim 5**, Sanmugam discloses the he method of claim 2, further comprising:

operating said first node (e.g., MSC 254) to communicate a paging signal to a second node (e.g., base station 256), indicating allocation of a paging transmission resource for use

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in transmitting a page corresponding to said received paging information (see col. 13, lines 14-27; col. 8, line 1-9; col. 2, lines 51-59; col. 10, lines 53-56; Figs. 9, 8B "ref. 206").

Regarding **Claim 6**, Sanmugam discloses the method of claim 1, further comprising: operating said first node (e.g., 254) to communicate said determined paging requirement to a second node (e.g., 256) in a paging request message (see col. 13, lines 14-27; Figs. 9, 8A-B).

Regarding **Claim 7**, Sanmugam discloses the method of claim 6, wherein said page request message includes at least a portion of said received paging information (see col. 11, lines 47-55; col. 8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; Figs. 3-6, 8A "ref. 192", 8B).

Regarding **Claim 8**, Sanmugam discloses the method of claim 7, wherein said determined paging requirement, indicated in said paging request message, is that said portion be included in a page (see col. 11, lines 47-55; col. 8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; Figs. 3-6, 8A-B).

Regarding **Claim 9**, Sanmugam discloses the method of claim 6, wherein said determined paging requirement, indicated in said paging request message, is that a page be acknowledged (e.g., page response) (see col. 13, lines 43-48; col. 9, line 2; col. 10, lines 8-11; col. 6, lines 28-34; col. 11, lines 10-30; Fig. 10A "ref. 310").

Regarding **Claim 10**, Sanmugam discloses the method of claim 6, wherein said determined paging requirement, indicated in said paging request message, is a quality of service (e.g., class of service) (see col. 11, lines 47-55; col. 8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; col. 7, lines 8-15; Figs. 3-6, 8A-B).

Regarding **Claim 11**, Sanmugam discloses the method of claim 10, wherein said quality of service includes a page transmission timing constraint (e.g., priority) (see col. 12, lines 12-18,31-40; Fig. 8B “ref. 212”).

Regarding **Claim 12**, Sanmugam discloses the method of claim 10, wherein said quality of service is one of a plurality of levels (see col. 7, lines 8-21; col. 8, lines 10-25,45-64; col. 9, lines 59-62,8-18).

Regarding **Claim 13**, Sanmugam discloses the method of claim 10, wherein said quality of service requires that a page be transmitted multiple times (see col. 9, lines 41-49; col. 9, line 65 - col. 10, line 3; Figs. 5-6, 7 “ref. 160, 164”, 8B “ref. 218”), where the multiple page attempts are based on the page characteristics such as the paging extent.

Regarding **Claim 14**, Sanmugam discloses the method of claim 10, wherein said quality of service requires retransmission of a page at least once in the absence of an acknowledgment (see col. 10, lines 8-11; col. 6, lines 28-34; col. 11, lines 10-30; Figs. 5, 7, 8B).

Regarding **Claim 15**, Sanmugam discloses the method of claim 14, further comprising:

operating the second node (e.g., 256) to cause said re-transmission of said page to be into a geographic area larger than an initial transmission area of said page (see col. 6, lines 28-40; Figs. 2, 5, 9), where the system retransmits the page according to the location area, paging area, and/or service area.

Regarding **Claim 16**, Sanmugam discloses the method of claim 6, wherein said determined paging requirement, indicated in said paging request message, is a quality of

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service level (see col. 11, lines 47-55; col. 8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; Figs. 3-6, 8A-B, 9).; and

wherein said page request message includes paging resource allocation information indicating a fraction of a paging resource to be allocated by said second node (e.g., 256) to pages having said quality of service level (see col. 8, lines 1-11,30-34; col. 7, lines 8-15; col. 10, lines 53-56; Figs. 9, 2-3), the method further comprising:

operating the second node (e.g., 256) to allocate said fraction of said paging resource to pages having a quality of service level indicated in said paging request message (see col. 8, lines 1-11,30-34; col. 7, lines 8-15; col. 10, lines 53-56; Figs. 9, 2-3).

Regarding **Claim 17**, Sanmugam discloses the method of claim 6, further comprising: operating said second node (e.g., 256) to allocate a paging transmission resource for transmitting a page, as a function of said determined paging requirement, indicated in said paging request message (see col. 8, lines 1-11,30-34; col. 7, lines 8-15; col. 10, lines 53-56; Figs. 9, 1-3).

Regarding **Claim 18**, Sanmugam discloses the method of claim 17, further comprising:

operating said second node (e.g., 256) to transmit a page using the allocated paging transmission resource (see col. 8, lines 1-11,30-34; col. 7, lines 8-15; col. 10, lines 53-56; col. 6, lines 52-65; Figs. 9, 1-3).

Regarding **Claim 19**, Sanmugam discloses the method of claim 17, further comprising:

operating said second node (e.g., 254) to communicate a paging signal to a third node (e.g., 256), indicating allocation of a paging transmission resource for use in transmitting a page corresponding to said paging information (see col. 8, lines 1-11, 30-34; col. 7, lines 8-15; col. 10, lines 53-56; col. 6, lines 52-65; Figs. 9, 1-3).

Regarding **Claim 20**, Sanmugam discloses a machine readable medium including a data structure (e.g., bit) in the form of a paging request message stored thereon (see col. 4, lines 56-63; col. 6, lines 52-62; col. 12, lines 33-36; Figs. 9, 1), where the machine readable medium is inherent, said paging request message including:

- a source node identifier (see col. 12, lines 33-36; col. 6, lines 17-21, 52-62; Figs. 9, 3);
- a destination node identifier (see col. 12, lines 33-36; col. 7, lines 8-15; col. 6, lines 17-21, 52-62; Figs. 9, 3); and
- paging message requirement information (see col. 9, line 2; col. 11, lines 47-55; col. 8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; Figs. 9, 2, 5-6, 8A-B).

Regarding **Claim 21**, Sanmugam discloses the machine readable medium of claim 20, wherein said paging request message further includes:

- a paging message payload (e.g., paging characteristics) including information to be transmitted in a page (see col. 9, lines 2, 41-43; col. 11, lines 47-55; col. 6, lines 52-65; col. 7, lines 8-15; col. 10, lines 53-56; Figs. 9, 5-6, 7-8B).

Regarding **Claim 22**, Sanmugam discloses the machine readable medium of claim 20, wherein said paging message requirement information includes:

information indicating whether or not an acknowledgement to a page is required (see col. 13, lines 43-48; col. 9, line 2; col. 10, lines 8-11; col. 6, lines 28-34; col. 11, lines 10-30; Fig. 10A "ref. 310").

Regarding **Claim 23**, Sanmugam discloses the machine readable medium of claim 22, wherein said paging message requirement information includes:

information indicating a number of retransmissions to be made if a page acknowledgement is not received (see col. 10, lines 8-11; col. 6, lines 28-34; col. 11, lines 10-30; Figs. 5, 7, 8B).

Regarding **Claim 24**, Sanmugam discloses the machine readable medium of claim 22, wherein said paging message requirement information includes:

page transmission quality of service information (e.g., class of service) (see col. 11, lines 47-55; col. 8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; col. 7, lines 8-15; Figs. 3-6, 8A-B).

Regarding **Claim 25**, Sanmugam discloses the machine readable medium of claim 22, wherein said paging message requirement information includes:

page transmission timing constraint information (e.g., priority) (see col. 12, lines 12-18, 31-40; Fig. 8B "ref. 212").

Regarding **Claim 26**, Sanmugam discloses the machine readable medium of claim 22, wherein said paging message requirement information is stored in an encoded format and includes at least page transmission quality of service information (e.g., class of service) and page transmission timing constraint information (e.g., priority) (see col. 11, lines 47-55; col.

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8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; col. 7, lines 8-15; col. 12, lines 12-18, 31-40; Figs. 3-6, 8A-B).

Regarding **Claim 27**, Sanmugam discloses a communications system (see col. 4, line 56 - col. 5, line 45; Figs. 1, 9) comprising:

a first node (e.g., 254) including:

i) means (e.g., 254) for receiving paging information, said paging information including at least one of a quality of service indicator (e.g., class of service), a type indicator, a source indicator, and a destination indicator (see col. 5, lines 40-45; col. 4, line 66 - col. 5, line 13; col. 13, lines 1-32; col. 7, lines 8-15; col. 8, line 1-9; col. 9, line 2; Figs. 9, 1, 8A-B), where page requests are based on paging information such as class of service, paging parameters, paging field, paging characteristics, and paging extent; and

ii) means (e.g., 254) for determining from said received paging information a paging requirement, said paging requirement being determined as a function of said at least one of a quality of service indicator (e.g., class of service), a type indicator, a source indicator, and a destination indicator (see col. 5, lines 40-45; col. 4, line 66 - col. 5, line 13; col. 13, lines 1-32; col. 7, lines 8-15; col. 8, line 1-9; col. 9, line 2; Figs. 9, 1, 8A-B), where page requests are based on paging information such as class of service, paging parameters, paging field, paging characteristics, and paging extent.

Regarding **Claim 28**, Sanmugam discloses the system of claim 27, wherein said first node (e.g., 254), further comprises:

means (e.g., 254) for allocating a paging transmission resource for transmitting a page as a function of a determined paging requirement (see col. 5, lines 40-45; col. 10, lines 53-56; col. 13, lines 1-32; col. 7, lines 8-15; col. 8, line 1-9; Figs. 9, 1, 8A-B).

Regarding **Claim 29**, Sanmugam discloses the system of claim 28, wherein said first node further includes a radio transmitter (e.g., 254) for transmit a page using the allocated paging transmission resource (see col. 5, lines 40-45; col. 13, lines 1-32; col. 7, lines 8-15; col. 8, line 1-9; col. 10, lines 53-56; Figs. 9, 1, 8A-B).

Regarding **Claim 30**, Sanmugam discloses the system of claim 29, wherein said first node (e.g., 254) further includes:

means (e.g., 254) for generating a paging request message including information indicating said determined paging requirement (see col. 6, lines 52-65; col. 13, lines 1-32; Figs. 3, 9, 8A-B); and

means (e.g., 254) for transmitting said paging request message to another node (e.g., 256) (see col. 6, lines 52-65; col. 13, lines 1-32; Figs. 3, 9, 8A-B).

Regarding **Claim 31**, Sanmugam discloses the system of claim 30, wherein said page request message includes at least a portion of said received paging information and wherein said determined paging requirement, indicated in said paging request message, is that said portion be included in a page information (see col. 11, lines 47-55; col. 8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; Figs. 3-6, 8A-9).

Regarding **Claim 32**, Sanmugam discloses the system of claim 30, wherein said determined paging requirement, indicated in said paging request message, is that a page be

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acknowledged (e.g., page response) (see col. 13, lines 43-48; col. 9, line 2; col. 10, lines 8-11; col. 6, lines 28-34; col. 11, lines 10-30; Fig. 10A "ref. 310").

Regarding **Claim 33**, Sanmugam discloses the system of claim 30, wherein said determined paging requirement, indicated in said paging request message, is a quality of service (e.g., class of service) requirement (see col. 11, lines 47-55; col. 8, lines 24-25; col. 8, line 45 - col. 9, line 4; col. 10, lines 31-56; col. 7, lines 8-15; Figs. 3-6, 8A-B).

Regarding **Claim 34**, Sanmugam discloses the system of claim 30, further comprising:

a second node (e.g., 256), said second node including:

i) means (e.g., receiver) for receiving said paging request message (see col. 4, line 66 - col. 5, line 13; col. 6, lines 52-65; col. 13, lines 1-32; Figs. 9, 1, 7-8B);

ii) means (e.g., controller) for allocating at least one paging resource as a function of paging requirement information included in a received paging request message (see col. 4, line 66 - col. 5, line 13; col. 10, lines 53-56; col. 13, lines 1-32; col. 6, lines 52-65; Figs. 9, 1, 7-8B); and

iii) means (e.g., transmitter) for transmitting a page to a mobile node using the at least one allocated paging resource (see col. 4, line 66 - col. 5, line 13; col. 13, lines 1-32; col. 6, lines 52-65; Figs. 9, 1, 7-8B).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanmugam (US 5,533,094) in view of Weber et al. (hereinafter Weber) (US 6,314,282 B1).

Regarding **Claim 4**, Sanmugam fails to disclose having the feature wherein said step of transmitting a page includes incorporating into said page information indicating a state of device operation, in which a device to which said page is directed, is to operate after receiving said page. However, the examiner maintains that the feature wherein said step of transmitting a page includes incorporating into said page information indicating a state of device operation, in which a device to which said page is directed, is to operate after receiving said page was well known in the art, as taught by Weber.

In the same field of endeavor, Weber discloses the feature wherein said step of transmitting a page includes incorporating into said page information indicating a state of device operation, in which a mobile terminal (7) which reads on the claimed "device" to which said page is directed, is to operate after receiving said page (see col. 5, lines 40-49, 3-22; col. 6, lines 13-20; Figs. 3, 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Sanmugam and Weber to have the feature wherein said step of transmitting a page includes incorporating into said page

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information indicating a state of device operation, in which a device to which said page is directed, is to operate after receiving said page, in order to provide mode change information that will automatically change the mode of a mobile terminal, as taught by Weber (see col. 2, lines 9-13, 65-67).

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Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Willie J. Daniel, Jr. whose telephone number is (703) 305-8636. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WJD,JR
26 December 2004


CHARLES APPIAH
PRIMARY EXAMINER